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# (54) STENT WITH OUTER MEMBER TO EMBOLIZE AN ANEURYSM

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#### Related U.S. Application Data

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(51) Int. Cl.

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(52) U.S. Cl.

#### (58) Field of Classification Search

See application file for complete search history.

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

4,364,392 A	12/1982	Strother et al.
4,994,069 A	2/1991	Ritchart et al.
5,226,889 A	7/1993	Sheiban
5,304,132 A	4/1994	Jang
5,334,210 A	8/1994	Gianturco
5,350,397 A 5,370,691 A 5,382,259 A	9/1994 12/1994 1/1995	Palermo et al. Samson Phelps et al. tinued)

#### FOREIGN PATENT DOCUMENTS

WO PCT/US/2009/002537 4/2009

#### OTHER PUBLICATIONS

U.S. Appl. No. 12/387,637, filed 2009, Connor et al. (Continued)

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#### (57) ABSTRACT

This invention is a stent to reduce blood flow to an aneurysm comprising: (a) an inner member, wherein this inner member is expanded from a first configuration to a second configuration within the parent vessel of an aneurysm, wherein the circumference of the second configuration is larger than the circumference of the first configuration; and (b) an outer member, wherein this outer member is less porous than the inner member, wherein this outer member covers or surrounds a first percentage of the surface area of the inner member when the inner structure is in the first configuration, wherein this outer member covers or surrounds a second percentage of the surface area of the inner member when the inner structure is in the second configuration, and wherein the second percentage less than the first percentage.

#### 1 Claim, 9 Drawing Sheets

